

Having thus described the invention, it is so claimed:

5 1. A grommet for sealing a conductor relative to a substrate having opposite sides and an opening therethrough for a conductor, said grommet being tubular and of a resilient material and having axially opposite ends, one of said ends for sealingly engaging with a conductor and the other of said ends being radially spaced from the conductor and diametrically larger than the opening through the substrate.

2. The grommet according to claim 1, wherein said other of said ends includes a radially extending peripheral flange having radially inner and outer peripheral surfaces respectively diametrically smaller and larger than the opening through the substrate.

3. The grommet according to claim 2, wherein said flange has an axially outer face and an axially inner face spaced therefrom in the direction toward said one end.

4. The grommet according to claim 3, wherein said inner face is planar.

5. The grommet according to claim 3, wherein said other end includes a radially inwardly extending peripheral recess adjacent said inner face of said flange.

6. The grommet according to claim 5, wherein said recess has a bottom diametrically dimensioned for sealing with the opening through the substrate.

7. The grommet according to claim 1, further including a wall between said one and said other end having at least one re-entrant wall portion therein.

8. The grommet according to claim 7, wherein said one end has an axially inner end and said re-entrant wall portion is at said inner end.

9. The grommet according to claim 7, wherein said at least one re-entrant wall portion is a first re-entrant wall portion, and a second re-entrant wall portion between said first re-entrant wall portion and said other end of said grommet.

10. The grommet according to claim 9, wherein said one end has an axially inner end and said first re-entrant wall portion is at said inner end.

11. The grommet according to claim 10, wherein said second re-entrant wall portion is radially outwardly of said first re-entrant wall portion and axially offset therefrom in the direction toward said other end.

12. The grommet according to claim 7, wherein said wall includes a connecting wall portion extending from the other end of the grommet toward said one end thereof, said connecting wall portion having a radial thickness greater than that of the at least one re-entrant wall portion.

13. The grommet according to claim 12, wherein said at least one re-entrant wall portion is a first re-entrant wall portion, and a second re-entrant wall portion between said first re-entrant wall portion and said other end of said grommet.

14. The grommet according to claim 13, wherein said radial thickness of said connecting wall portion is greater than that of each said first and second re-entrant wall portion.

15. The grommet according to claim 14, wherein said one end has an axially inner end and said first re-entrant wall portion is at said inner end, said second re-entrant wall portion is radially outwardly of said first re-entrant wall portion and axially offset therefrom in the direction toward said other end, and said connecting wall portion extends from said second re-entrant wall portion toward said other end of said grommet.

16. The grommet according to claim 7, wherein said other of said ends includes a radially extending peripheral flange having radially inner and outer peripheral surfaces respectively diametrically smaller and larger than the opening through the substrate plate and said flange has an axially outer face and an axially inner face spaced therefrom in the direction toward said one end.

17. The grommet according to claim 16, wherein said inner face is planar.

18. The grommet according to claim 16, wherein said other end includes a radially inwardly extending peripheral recess adjacent said inner face of said flange.

19. The grommet according to claim 11, wherein said other of said ends includes a radially extending peripheral flange having radially inner and outer peripheral surfaces respectively diametrically smaller and larger than the opening through the plate, said flange having an axially outer face and an axially inner face spaced therefrom in the direction toward said one end, and said inner face being planar.

20. The grommet according to claim 19, wherein said other end includes a radially inwardly extending peripheral recess adjacent said inner face of said flange.

21. The grommet according to claim 14, wherein said other of said ends includes a radially extending peripheral flange having radially inner and outer peripheral surfaces respectively diametrically smaller and larger than the opening through the plate, said flange having an axially outer face and an axially inner face spaced therefrom in the direction toward said one end, and said inner face being planar.

22. The grommet according to claim 21, wherein said other end includes a radially inwardly extending peripheral recess adjacent said inner face of said flange.

23. A method of sealing a conductor having a diametrically larger connector on an end thereof relative to a substrate having opposite sides and an opening therethrough larger than the connector, comprising the steps of providing a resilient grommet having a first end for sealingly engaging the conductor and a second end larger than the opening, mounting the grommet on the conductor with the first end facing the connector, inserting the connector and conductor through the opening from one side of the substrate, and sealing the second end of the grommet to the substrate.

24. The method of claim 23, wherein said second end of said grommet includes a flange and said sealing includes the step of adhesively bonding said flange to said one side of said substrate.

25. The method of claim 24, wherein said adhesively bonding includes the steps of applying an adhesive to said one side of said substrate and pulling said grommet in the direction to engage said flange with said adhesive.

26. The method of claim 24, wherein said adhesively bonding includes the steps of applying adhesive to said flange and pulling said grommet in the direction for said adhesive to engage said one side of said substrate.

27. The method of claim 23, wherein said second end of said grommet includes a recess for receiving the peripheral edge of the opening and said sealing includes positioning said grommet for said recess to receive the edge of the opening.

28. The method of claim 27, wherein the step of positioning the grommet includes pulling said grommet outwardly relative to the other side of said plate.